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# THE INDIAN TEXTILE INDUSTRY AND AMERICAN COTTON . . . .

Prior to the World War, almost 60 percent of India's cotton-cloth requirements were imported, with Great Britain virtually the only source of supply. This situation has undergone a radical change in the last two decades. The output of the Indian textile industry has increased to such an extent that the volume of annual imports has been reduced from over 3 billion yards to only 750 million. This, in turn, has caused a sharp decline in the demand for American cotton in England, since the goods exported to India were made largely of this growth. It is estimated that during the years immediately before the war the Indian people consumed an annual average of more than 1 million bales of American cotton, chiefly in the form of cloth imports. The displacement of imported goods by domestic cloth, made largely of Indian cotton, has reduced the ultimate consumption of American cotton in India to about 350,000 bales.

The development of a modern cotton-textile industry was the outstanding feature of the industrial revolution in India. At present, cotton-textile manufacturing is India's most important industry, with wide ramifications extending into every phase of the country's economic life. The Indian production of machine-made cotton fabrics has increased from less than 1 billion yards a quarter of a century ago to about 3.6 billions in 1936-37. Despite this rise and the persistence of hand weaving and hand spinning, the total Indian cloth output falls short of domestic requirements, and India continues to be the world's largest importer of piece goods.

This should not obscure the fact, however, that imports of piece goods have declined sharply - from a peak of 3.2 billion yards in 1913-14 to only 764 million yards in 1936-37. The drastic shrinkage in imports has had a highly unfavorable effect upon the British textile

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industry. In the decade prior to the World War, Lancashire supplied more than 2.3 billion yards annually, or about 97 percent, of the total cloth imports into India; but by 1936-37 Lancashire supplied only 334 million yards, or 44 percent of the total. The total reduction in imports, coupled with the displacement of the British-made goods by imports from Japan, has materially affected the final consumption of American cotton, in the form of textiles. It is estimated that the decline in cotton-cloth imports from the United Kingdom has resulted in a decrease of about 900,000 bales in the ultimate consumption of American cotton in India. 1/

Much attention has been paid to the increased competition of Japanese cotton goods and its effect upon British trade in India; yet total imports from Japan, which were at their height during the 5-year period 1932-1936, averaged less than 15 percent of peak imports from the United Kingdom before the World War. It is apparent that the expansion of domestic mill production has been largely responsible for the tremendous decrease in imports of British cotton cloth into India and the devastating consequences to Lancashire. American cotton exports would not have been affected so unfavorably if the English piece-goods trade with India had been lost to Japan. It is true that Japanese mills utilize a smaller proportion of American cotton in the bulk of their output than do British mills; Indian mills, on the other hand, have always used only very small quantities of American cotton. During the past 10 years, Japanese mills have consumed, on an average, about 1,400,000 bales of American cotton, whereas Indian mills have averaged less than 70,000 bales.

The influence of the expansion of cotton-textile production in India and the shrinkage of imports of British cotton piece goods upon the world demand for American cotton is difficult to appraise accurately. It would certainly be erroneous to suggest that the estimated reduction of more than three quarters of a million bales in the ultimate use of American cotton by the Indian people - that is, in the form of textile imports - was not offset to some extent by increased consumption in other countries such as Japan. But the fact remains that the increased productivity of Indian textile mills, accompanied by decreased cloth imports from the United Kingdom and increased imports from Japan, undoubtedly caused American cotton exports to suffer a large net loss.

The purpose of this survey is to describe the development of the Indian textile industry and trade. Furthermore, it is intended to analyze the significance of the shift from Lancashire-made cotton fabrics

1/ This estimate is only a rough approximation, based largely upon yardage figures for cloth imports into India and estimates of the extent to which American cotton is used for various kinds of cloth in the United Kingdom, Japan, and other cloth-exporting countries, but it is believed to be reasonably accurate.

to domestic and Japanese textiles in India, thus throwing some light on an important phase of foreign consumption and demand for American cotton.

## Development of the Industry

Cotton spinning and weaving has been practiced in the homes of India for many centuries - possibly longer than in any other country. Indian hand spinners and weavers had apparently developed a high degree of skill long before power textile machinery was invented, and Indian hand-made cotton cloth was famous the world over. At the beginning of the eighteenth century, British legislation curtailed the importation of Indian cotton cloth. But with the application of steam power to spinning and weaving and the development of improved power machinery during the second half of the eighteenth century, India lost the English market, while Indian handicraft spinners found it increasingly difficult to compete with factory-made cloth from England. Throughout the nineteenth century and the early part of the twentieth, Lancashire, using mostly American cotton, dominated the Indian textile trade.

The first Indian power-driven cotton mill was established in the 1850's. The enormous Indian market, the availability of raw cotton, and the abundant and cheap labor supply augured well for the development of a domestic industry. The growth of the industry, however, was not spectacular.

In 1884, there were only 2 million cotton spindles as against 43 million in the United Kingdom. Up to the end of the World War, the expansion of the Indian textile industry proceeded at a slow pace. During the World War, the Japanese cotton-textile industry made notable progress, but for the Indian industry this was a period of "arrested development," because of the difficulty in obtaining the necessary mill equipment from England. After the war, however, considerable progress was made, especially in weaving. From 120,000 power looms in 1920, the total number in India increased to 180,000 in 1930 and to 200,000 in 1936. The number of spindles also increased but at a slower rate, or from 7 million in 1920 to 9 million in 1930 and to nearly 10 million in 1936. At present only five countries exceed India in the number of spindles.

In 1936-37 Indian mills consumed about 2.5 million bales of cotton, ranking sixth among the cotton-textile industries of the world, preceded by those of the United States, the Soviet Union, Japan, China, and the United Kingdom, in order of importance. Considering also the large volume of cotton consumed by the hand-loom industry, India is undoubtedly one of the leading consumers of raw cotton, most of which (85 percent) is of domestic origin.

A number of features characterize the development of this industry. Formerly textile mills were located mainly in and around Bombay. But in

the past 25 years the importance of Bombay as the textile center has declined considerably, whereas that of Ahmedabad and a number of other regions has been increasing steadily. Originally this shift was the result of the availability of a cheaper labor supply in these regions, but during the past few years wages in Ahmedabad have been higher than in Bombay.

Indian mills are smaller than mills in the United States and average considerably fewer spindles than Japanese mills. The average number of spindles per mill in Japan is about 37,000 against only 27,000 in India. It is difficult to make a comparison of looms, however, because of the difference in the character of the weaving industries. In Japan, there are many small establishments having only a few power looms and no spindles, whereas in India spinning and weaving takes place for the most part in the same mills. As in most cotton-textile industries, a definite upward trend has occured in the production of higher-count yarns for weaving finer qualities of cloth.

## Factors Retarding the Industry's Growth

If the increasing number of mills, spindles, and looms were synonymous with industrial prosperity, the Indian cotton-textile industry would be prosperous indeed. In reality, the record of the greater part of the industry points in the opposite direction. Barring some exceptions, particularly the period of prosperity from 1917 to 1922, sometimes referred to as the Golden Age of the textile industry, it has been in a precarious position.

### British policies

The progress of the Indian industry was severely hampered for many years by unfavorable conditions that were not of its own making. To a certain extent, these may be attributed to the opposition of Great Britain to the industrialization of India. This opposition was particularly directed against the development of a competing cotton-textile industry. For a long time, the place of India in England's scheme of things was that of a country "growing raw produce to be shipped by British agents in British ships, to be worked into fabrics by British skill and capital, and to be exported to India by British merchants to their corresponding firms in India and elsewhere." 2/ The rigid application of this policy assumed such forms as placing obstacles in the way of obtaining capital, imposing an excise tax on all cotton goods produced

2/ Ravade, M. G., "Essays in Indian Economics," quoted by Wadia and Joshi in "The Wealth of India," Macmillan, 1927, p. 326. Substantially in agreement with the view expressed by this Hindu writer are such English students of the Indian economic development as R. C. Dutt (Economic History of India), H. H. Wilson (History of India, Vol. 1, p. 538), and a number of others.

in India and import duties on textile machinery, and, what was even more important, withholding tariff protection for finished cotton cloth.

In the course of time, many of the disabilities under which the industry had operated were lifted. The abolition of import duties on textile machinery, the removal of excise taxes on cotton goods manufactured in India, the Indian boycott on piece goods of foreign origin, and the high protective duty now enjoyed by the industry have contributed greatly to its expansion. It remained true, nevertheless, that these were not sufficient to overcome a host of difficulties in the managerial, financial, technical, and labor aspects of the industry, from which it has suffered for a long time.

Managing agency system

The Indian cotton-textile industry is concentrated in the hands of the so-called managing agencies. The function of an agency is to promote the enterprise by furnishing the initial capital, to finance the operations of the mills through short-term loans, and to engage in the everyday management of the mills. In view of the extreme difficulty in obtaining capital for new enterprises in India, the agency system in a sense pioneered the country's industrialization. But for a number of years past, the usefullness of the managing agencies has been questioned. The opponents of the system contend that their rights, privileges, and profits are entirely out of proportion to the services rendered. "It is a truism," the leading journal of the Indian textile industry pointed out, "which nobody would care to question, to say that the present anaemic condition of the mill industry is largely due to the prevailing methods of the managing agency, a system that has outlived its usefulness." 3/

An agreement between a managing agency and a mill is very often for a period lasting from 30 to 40 years and, in many cases where no time limit is specified, the agreement becomes permanent. The basic feature of each agreement, and one that is now subjected to severe criticism, is the commission the agency receives from the mill. One form is a commission of from 10 to 12.5 percent of the gross profit, no consideration being given to the net profit. Another type is the "commission on production," which tends to stimulate output, just as a "commission on sales" tends to stimulate sales, whether it is profitable or not.

Agencies have also been known to receive secret commissions or rebates in connection with subsidiary services rendered on behalf of the mills under their management. 4/ Some of them also engage in speculative cotton purchases, crediting them to the mills if unsuccessful but to their own account if profitable. This practice is partly responsible

3/ From an editorial in The Indian Textile Journal, December 1933, p. 78.
4/ Report of the Indian Tariff Board, 1932, p. 87.

for the charge that Japan has bought cotton in India at more favorable prices than most Indian mills have actually paid for the same type of cotton. A single agency may be in charge of numerous textile mills, as well as of many other kinds of business, and the result is that it is impossible for sufficient attention to be given to the details of management. 5/ The situation is aggravated by the fact that most of the mill directors lack the required managerial training. Thus, "of the 175 directors of the mills in Bombay, there are only eleven who have received practical training." 6/

Financial conditions

One of the consequences of agency management has been the unsatisfactory financial position of the mills, particularly of those located in Bombay. The Indian mills, although generally unprofitable, have enjoyed periods of great prosperity. Thus, during the years 1917-1922, dividends on the paid-up capital ranged from 16 to 40 percent. These were of short duration, however, and there has been no sustained prosperity as in Japanese mills. In the past, the following differences between the two industries in prosperous times were noted: Japanese mills paid even higher dividends, but they also left a substantial share of the profits for the accumulation of a huge reserve fund and for depreciation purposes; in India, on the other hand, many mills indulged in dividend distribution characterized by the Tariff Board as "unduly high," with the result that the accumulation of reserves for future needs was relatively small. 7/

During the period of the post-wartime boom and exceedingly high dividends, the Indian industry was overcapitalized at inflated values. Consequently, the depression that set in in 1923 brought financial difficulties to many companies. Dividends since then have been small or totally lacking. According to the report of the Indian Tariff Board, submitted in March 1936, "an examination of the financial position of mills in Bombay City and Island shows that these mills are not making sufficient profits to cover the depreciation allowance to which they are entitled and the large amounts required for interest on borrowed money." 8/ While this appraisal does not necessarily apply to large mills, well equipped and well managed, it does reflect the financial position of a considerable part of the Indian cotton-textile industry.

The Labor problem

The labor problem is undoubtedly another basic source of the industry's weakness. According to the Royal Commission of Labor, "In

5/ Ibid., p. 89.
6/ Report of the Indian Tariff Board, 1927, p. 88
7/ Ibid., pp. 83-84
8/ The Indian Textile Journal, July 1936.

India nearly the whole mass of industrial labor is illiterate, a state of affairs which in unknown in any other country of industrial importance. It is almost impossible to overestimate the consequences of this disability, which are obvious in wages, in health, in productivity, in organization and in several other directions." 9/ This may explain in a general way why "the greatest disability of the Indian (textile) industry as compared with Japan is in respect of labor." 10/

In 1935-36, the average number of employees in the textile industry was 418,000, most of whom were male. The number of hours of work is set at 9 per day, or 54 per week, with wages paid on either a monthly or a piece-work basis. All workers are drawn from the overpopulated and impoverished Indian villages. There is little or no regulatory wage legislation in India, and wages are depressed by the large supply of village labor with a very low standard of living. For this reason, wages of the Indian textile workers are even lower than those of the Japanese.

Weavers are the best paid workers. According to American Consul Curtis C. Jordan's report, prepared in December 1936, the monthly wage of a weaver tending one loom ranged from Rs.15 ($5.63) to Rs.18 ($6.75), and two looms, from Rs.30 ($11.25) to Rs.40 ($15.00). In 1934, in Bombay, the average monthly earning of the textile workers, other than weavers, was less than Rs.24 ($9.06 or 30.5 yen). "Since then," a writer on the subject stated, "wages have changed, if at all, for the worse and not for the better." 11/

Wages are not paid promptly, but are a month or 6 weeks in arrears "because if full settlement were made immediately after wages fall due, the workers would have a tendency to change mills frequently." 12/ Many workers are, therefore, permanently in debt to money lenders, paying an interest rate of from 75 to 150 percent per year. The system of fines, hiring of labor through jobbers who exact special payments from the workers, and the fact that "little advance has been made in the housing of labor or in the organization of welfare work" 13/ reduce the low wage scales still further.

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9/ Rajani Xanta Das, "Child Labor in India," International Labor Review, January 1, 1934. The author quoted from the Report of the Royal Commission on Labour in India, p. 27, published in London, H. M. Stationery Office, 1931.
10/ Indian Tariff Board Report, Caluctta, 1932, p. 206.
11/ Dr. V. K. R. V. Rao, "Problems Before the Textile Labour Inquiry Committee," Indian Textile Journal, November 1937, p. 48.
12/ Actual evidence given before the Royal Commission on Labour in India by a representative of the Ahmedabad Mill Owners' Association. Quoted by F. Utley in "Lancashire and the Far East," London, 1931, p. 325.
13/ Indian Tariff Board Report, Calcutta, 1932, p. 202.

Low labor productivity

In the Japanese textile industry, low wages have gone hand-in-hand with a fairly high degree of industrial efficienty. This is not true of the Indian industry. In Japan, a woman weaver attends from 6 to 8 looms with an efficiency of 95 percent (loom running 95 percent of the time) whereas in India a man weaver handles 2, and in a very few mills 3 or 4, looms with an efficiency of 80 percent. Where automatic looms are employed in Japan, a girl is able to attend to 50 looms, but there are very few automatic looms in Indian mills. Furthermore, "in Japan a sider attended to 600 spindles for a wage of Rs.1-14-6 (50.2 cents) a day, with an efficiency of 90 percent; while a spinning boy in Bombay attended to 181 spindles for a wage of Rs.1 a day, with an efficiency of a little over 80 percent." 14/

The higher efficiency of the Japanese worker far outweighs the higher wages he receives in comparison with the Indian worker, since it is estimated that the cloth output of the former is 3.5 times as great as that of the latter. For the same reason, in 1932 the wage costs per bale of 400 pounds of medium-count yarn (40s) was equivalent to 34.4 yen in India as against 13.2 yen in Japan. 15/ The Indian Tariff Board arrived at this general conclusion: "The total labor cost per pound of yarn of average count 16s, including both fixed and piece-work wages, in a Bombay mill exceeds the cost in a Japanese mill by over 60 percent. Similarly, the labor cost per loom per day on plain grey cloth in a Bombay mill is over three times the cost in a Japanese mill. * * * It is this enormous disparity in labor cost which makes the position of the Indian industry not merely difficult but almost precarious in competition with the Japanese industry." 16/

This summary was a result of studies made prior to 1932. Rationalization in the Japanese textile industry has been carried to greater heights since then, but according to all available accounts very little progress has been made toward reducing costs in the Indian textile industry during the same period. This disparity in labor costs is one reason why "Japanese can purchase raw cotton in India or in America, transport it to Japan, manufacture it and send it to India, pay an import duty of 11 percent and yet place it on the market at a price that does not yield reasonable profit to Indian mill owners." 17/ This held true even after the tariff was increased almost fivefold. But when the duty was low, the demand for high tariff protection became the rallying cry of the Indian industry.

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14/ Ibid., p. 111; see also T. Sasakura, "On the Plight of the Bombay Cotton Mills," The Indian Textile Journal, July 1933, p. 340.
15/ Mitsubishi Economic Research Bureau, June 1933, circular, p. 9.
16/ Ibid., p. 112.
17/ Austey, Vera, "The Economic Development of India," London, 1936, p. 268. This statement first appeared in the 1929 edition of the book.

Effect of tariffs

Indian tariff policies with respect to cotton-textile imports are based upon a number of considerations. The fundamental one, of course, is a tariff sufficiently high to "protect" the domestic industry. Another is the preferential treatment of imports from England. In the case of Japanese goods, the tariff is supplemented by a quota limitation. Effective tariff protection for the Indian cotton-textile industry is of fairly recent origin. In the early days, import duties were primarily for revenue and were, therefore, frequently supplemented by an excise duty of an equal amount upon all yarns of 20s, and above, spun in Indian mills. Yarns coarser than 20s were admitted duty-free and there was no excise tax on hand-woven cloth and yarn. The import duty on cotton piece goods was raised to 11 percent in 1921. The imposition of a 5-percent duty on imported yarn and the abolition of the excise duties in 1926 were the first real steps in the direction of a protective tariff. The depressed state of the textile industry after the post-war boom, which was accentuated after 1929, and the inroads made by the Japanese textile industry in the Indian market brought about a successive rise in tariff rates within short intervals (see table 1).

Table 1. British Indian import duties on cotton piece goods (grey), 1894-1938

| Date effective | Ad-valorem rate | | In United States cents per pound a/ | |
|---|---|---|---|---|
| | Of British manufacture | Not of British manufacture | Of British manufacture | Not of British manufacture |
| | Percent | Percent | Cents | Cents |
| 1894, Dec. 27.... | 5.00 | 5.00 | - | - |
| 1896, Feb. 3..... | 3.50 | 3.50 | - | - |
| 1917, Mar. 7..... | 7.50 | 7.50 | - | - |
| 1921, Mar. 1..... | 11.00 | 11.00 | - | - |
| 1930, Apr. 4..... | 15.00 | 20.00 | 7.89 | 7.89 |
| 1931, Mar. 1..... | 20.00 | 25.00 | 7.37 | 7.37 |
| 1931, Sept. 30... | 25.00 | 31.25 | 9.21 | 9.21 |
| 1932, Aug. 30.... | 25.00 | 50.00 | 7.20 | 8.65 |
| 1933, June 7..... | 25.00 | 75.00 | 8.70 | 13.42 |
| 1934, Jan. 8..... | 25.00 | 50.00 | 10.36 | 12.43 |
| 1936, June 25 b/.. | 20.00 | 50.00 | 8.21 | 12.31 |

Compiled from the Indian Textile Journal, July 1936, p. 336, and Board of Trade Journal, London.
a/ Conversions to United States currency made on the basis of average annual rates of exchange.
b/ No change in basic rates since June 25, 1936.

The principle of discriminatory protection was for the first time applied in 1930 against Japan. Studies by the Indian Tariff Board showed

that without additional protection against the flood of cotton textiles from Japan most Indian mills could hardly continue operations. This conclusion was followed by a tariff of 50 percent ad valorem on non-British piece goods. Even this was not enough to stop the influx of Japanese cloth, and the tariff on non-British piece goods was again raised, this time to 75 percent. The threatened boycott of Indian cotton by Japan and the Indo-Japanese Agreement in 1934 provided for a reduction of the tariff to 50 percent but limited total cloth imports from Japan. 18/

The textile industry is protected now by a high tariff and a quota system, which definitely limit inroads of Japanese piece goods into the Indian market. These measures were taken "to enable the Indian industry to stand on its own legs and to meet competition from other countries." 19/ Judging by the decline of imports and the rise of domestic production, it may be said that the tariff was the main factor in bringing that situation about.

Notwithstanding the inefficiency of the Indian mills, the tariff enables them to compete successfully with Lancashire in comparatively coarse materials. And it apparently matters little if Indian piece goods are less durable than goods of similar type imported from Lancashire. The significant point is that the domestic product sells for less. As regards Japan, the price-cutting tendency, which has operated in the past to the disadvantage of Indian mills, has been lessened considerably under the present quota arrangement. Thus, with Lancashire exports to India largely limited to finer goods, for which the market in India is small, and Japanese exports definitely limited by quota, it is clear that protective measures have obtained a larger share of the domestic market for the domestic industry. On the other hand, the fact that this highly protected market has, to date, contributed little toward greater industrial efficiency indicates a tendency to perpetuate some of the basic weaknesses of the industry. It is also important to note the generally admitted restrictive effect of a high tariff on consumption. This is particularly significant in India, where the purchasing power of the great mass of the people is at a very low level.

## Indian Cotton Mills

The serious shortcomings peculiar to the Indian textile industry have undoubtedly retarded its progress; but, as already indicated, the industry has expanded, although at a considerably slower pace than in Japan. From the standpoint of American cotton producers and exporters, by far the most important indices of this growth are the volume of cotton consumed and the quantity and quality of yarn and cloth produced by mills.

18/ See Foreign Agriculture, December 1937, pp. 605-606.
19/ Indian Textile Journal, January 1936, p. 131.

Cotton consumption

The annual mill consumption of cotton in India increased from a little more than 200,000 bales (of 478 pounds) in 1878-79 to about a million bales in 1900-1901. By the end of the next decade, mill consumption reached 1,600,000 bales, an increase of 60 percent. In the following two decades, cotton consumption manifested only a very slight upward trend. Only after 1929 did cotton consumption in Indian mills show a marked rise. In 1936-37, mills consumed an all-time record volume of nearly 2,500,000 bales, as against only about 1,700,000 bales in 1928-29. In addition to the cotton utilized in mills, an estimated quantity of 600,000 bales is consumed annually on hand spindles or in various other ways in households.

Cotton consumed by the Indian cotton-textile industry is chiefly of a quality 7/8 inch and shorter. It is, of course, principally Indian cotton, which is mainly short staple. Although such cotton has certain technological limitations, it can be and is widely used for the production of coarse yarns and fabrics, which are in great demand for clothing in India and in other countries with large populations and low standards of living.

Utilization of foreign cotton: To meet the demand for the finer cloths used in small quantities by the classes that can afford them, the Indian textile industry is producing increasing quantities of finer-count cotton yarns. These yarns require longer staples than can be obtained from the bulk of the Indian cotton crop. For this purpose Egyptian, American, and Uganda and other sundry growths have been imported in considerable volume during recent years. In 1913-14, such imports constituted less than 1 percent of the total volume of mill consumption, whereas in recent years the figure has risen to 14 percent.

Consumption of Egyptian and sundry growths averaged about 125,000 bales annually during the 5-year period ended with 1931-32 against 275,000 bales in the following 5-year period. Consumption of these growths rose to a new high of 360,000 bales, or about 15 percent of total Indian mill consumption, in 1936-37. It is generally believed, however, that in 1937-38 imports and consumption of Egyptian and sundry growths may be somewhat smaller, since imports of American cotton, particularly from California (mainly 1-1/16 inches and longer), have increased sharply; the total amounted to nearly 150,000 bales during the first 7 months of the season against 6,000 in the corresponding period of 1936-37. Indian imports of American raw cotton increased considerably during the late twenties and early thirties. The peak annual consumption of American cotton in India was 350,000 bales in 1926-27, but the yearly average for the decade ended with 1936-37 was only about 70,000 bales.

Importance of Indian cotton: India ranks second only to the United States as a cotton-producing country. The "commercial" production and acreage of Indian cotton jumped from the low level of less than 15 million acres and slightly over 2 million bales just before the end of the nineteenth century, to 22 million acres and 3.5 million bales at the beginning of the war. Production and acreage have since shown a further increase, although the upward trend was more gradual than during the period 1900-1914. In the 5-year period ended with 1936-37, Indian cotton area and production averaged 24 million acres and 4.5 million bales. The 1937-38 crop is now estimated at 5.1 million bales. By way of comparison, it may be pointed out that cotton production in the United States during the same year was 18.9 million bales, or the largest on record, while the average production during the 5 years ended with 1936-37 was 11.7 million bales.

Though the yield of Indian cotton has improved in the past 10 years, it averaged only 86 pounds per acre during that period, or less than half the average United States yield. The board investigating the Indian textile industry stated that this yield was lower than that of "any other cotton-growing country in the world, and the reasons are alleged to be the less favorable climatic conditions and the less generous use of fertilizers in India than in other countries." 20/

A large part of the Indian crop, as of the American, is consumed in foreign countries. Of the total world mill consumption of Indian cotton in 1936-37, about 38 percent was processed by Indian mills and 62 percent distributed among a number of countries as follows: Japan 35, Continent of Europe 16, the United Kingdom 8, the United States 1, and other countries 2 percent.

As previously indicated, Indian cotton, like Chinese, is short staple, mainly 7/8 inch and shorter. The United States also produces large quantities of 7/8-inch and shorter cotton, but more than half of the crop is 15/16 inch and longer. Estimates of the staple length of Indian cotton made by the Indian Central Cotton Committee indicate that more than two-thirds of the 1935-36 crop was 7/8 inch and shorter in staple. These figures also show considerable increase in the proportion of the Indian cotton crop 7/8 inch and longer. Studies made by the Central Committee in 1931-32, however, indicated that only about one-fifth of the Indian cotton available for consumption was 7/8 inch and longer because of poor ginning and mixing with shorter cotton. 21/ In recent years, India has apparently produced a few thousand bales of American upland varieties longer than 1 inch and a great deal of effort is being expended to increase the production of the longer staples, especially in the irrigated areas of Punjab and Sind.

20/ Report of the Indian Tariff Board, 1932, p. 53.
21/ Annual Report of the Indian Central Cotton Committee, Bombay, August 1932.

Problems involved in improvement of the quality of Indian cotton and in expanding the acreage are formidable. The Indian Tariff Commission's report of 1932 stated that, "for the production of yarn counts higher than 40s it is admitted that no suitable raw cotton is now available in India; nor does there appear to be any definite prospect of such cotton being grown in India." Meanwhile, official and private endeavors are concentrated upon irrigation as the chief means of expanding the cotton area.

The question of a sufficient food supply also has vital bearing upon the expansion of the Indian cotton crop. The first concern of the Indian farmers is to produce food, since the food supply does not keep pace with the country's needs. The incentive to expand the food-crop area is always present, unless the price of the alternative crop, raw cotton, is sufficiently high to make food imports practicable. Under the circumstances, the price relationship between food products and cotton is probably the principal factor in determining the expansion or contraction of the cotton area. It would require, therefore, the combined effect of relatively higher cotton prices and irrigation developments to bring about a further expansion of the Indian cotton acreage.

Yarn production

Cotton-yarn production in the 5-year period ended with 1936-37 was tho highest on record, estimated at over a billion pounds annually. Practically the entire production is consumed domestically. Before the World War, however, India was a large exporter of cotton yarn. During the 10 years prior to the war, exports of yarn accounted for approximately a third of total production. Since then, yarn exports, most of which were destined for China, have dwindled from an average of about 200 million pounds (1909-1913) to an average of less than 15 million pounds (1932-1936).

In recent years, yarn imports have exceeded exports. The former amounted to 28 million pounds in 1936, or less than 3 percent of Indian production. Japan and the United Kingdom are the chief sources of yarn imports; and, although the total volume has not changed much, the quality of the yarn has shifted to a marked extent. Imports of coarse and medium yarns have decreased sharply, while those of fine counts (many of which are above 50s) have increased substantially.

An outstanding post-war development in the Indian textile industry is the steady increase in the production of fine-count yarns. In this respect, the Indian cotton-textile industry has followed the pattern of cotton-textile industries in a number of other countries. Coarse yarns still constitute the bulk of production, but the proportion of fine counts is increasing steadily. Thirty years ago, more than 80 percent of the total yarn output in India consisted of 20s and coarser, whereas in

1936-37 about 56 percent was of this description. The production of 10s and coarser yarns was actually smaller during the past 5 years than in the corresponding period of a quarter of a century ago, but the production of yarns ranging from 21s to 30s increased about 2.5 times, of 31s and 40s more than 5 times, and of counts finer than 40s more than 20 times.

It is apparent that the output of Indian mills has gradually displaced imported yarns until most of the coarse and a good deal of the medium counts used in India are made by domestic mills. The group of yarns ranging from 20s to 40s is that for which the bulk of American cotton is particularly well adapted. Both the United Kingdom and Japan use large quantities of American cotton in these yarns. For this reason, the upward trend in the production of finer counts by Indian mills indicates that the decline in imports of goods made largely from American or other cotton of the medium and long staples is likely to continue.

The bulk of Indian cotton, however, is not suitable for spinning yarns above 30s. A continuation of the tendency to spin fine yarn must lead to an increased consumption of foreign cotton, particularly American, Brazilian, and Egyptian, unless the increase in the production of the longer staples of Indian cotton is sufficiently rapid to supply the needs of Indian mills. As previously indicated, this does not appear likely for some time to come.

Cloth output

The production of cloth in Indian mills in 1936-37 was more than three times as large as the yardage immediately prior to the World War. In 1913-14, the output amounted to 1.16 billion yards, or 22 percent of the apparent consumption of Indian cloth, whereas in 1936-37 the respective figures were 3.57 billion yards, or about 67 percent. The real significance of the rise in cloth production is that it was most pronounced in the so-called bread-and-butter, or the most important, part of the Indian cotton-goods import trade. The output of mass-consumption articles, such as the dhuti (an outer garment used throughout most of India) at one time largely imported from England, rose from approximately 284 million yards in 1913 to 1.16 billion in 1936. During the same period, the production of shirtings and longcloths, the second most important items, almost trebled. These articles, too, are in direct competition with similar types of goods imported from the United Kingdom and Japan. In pre-war years, Lancashire dominated this trade, but since the war the importance of England in this field has practically disappeared as a result of the rise in domestic output and the successful competition of cloth imports from Japan.

The increase in cloth output has been primarily in the coarser classes of goods made from Indian cotton. These types have always

supplied the needs of most of the Indian population. Indian mills have also made progress in the manufacture of fine cloth, such as cambrics and lawns, but in 1936 these accounted for only slightly more than 3 percent of the entire mill output. The volume of production in that year stood at 115 million yards as against 3 million in 1929.

Table 2. India cotton-cloth production and imports, 1913-14 and 1936-37

| Item | April - March | | | |
|---|---|---|---|---|
| | 1913-14 | 1936-37 | 1913-14 | 1936-37 |
| | Million yards | Million yards | Percent | Percent |
| Mill production a/ | 1,164 | 3,572 | 21.6 | 65.1 |
| Hand-loom production b/ | 1,016 | 1,152 | 18.9 | 21.0 |
| Imports c/ | 3,197 | 764 | 59.5 | 13.9 |
| Total production and imports | 5,377 | 5,488 | 100.0 | 100.0 |
| Imports by source c/ - | | | | |
| United Kingdom | 3,104 | 334 | 97.1 | 43.7 |
| Japan | 9 | 417 | 2.6 | 54.6 |
| Others | 84 | 13 | .3 | 1.7 |

a/ From Monthly Statistics of Cotton Spinning and Weaving in Indian Mills.
b/ Hand-loom production estimated on the basis of total yarn available for sale, i.e., yarn production minus total mill consumption (total woven goods produced) minus exports and reexports and plus imports. Final figure obtained by assuming 4 yards of cloth per pound of yarn estimated as available for sale.
c/ From Annual Statement of the Sea-Borne Trade of British India.

## Hand-Loom Production

In addition to mill production, mention should be made of the role of the hand-loom industry as a supplier of cloth. All of the weaving prior to the nineteenth century and a considerable portion of it during that century was on hand looms. By 1909-10, however, Indian mill production was more than three times that of hand looms.

It is estimated that India now possesses some 2.5 million hand looms, producing an annual average of 1.3 billion yards (1927-1936), or about 20 percent of the total cloth available for consumption. Although it is apparent that, in proportion to total cloth production, hand-loom output shows a downward trend, in absolute terms it shows a slight upward trend. Its continued existence arises in part from the fact that it is a hereditary occupation and in part from the lack of alternative occupations for people having very low incomes. It is also of interest to note

that before the development of the mill industry hand looms are said to have produced some very fine cloth. At present, however, they weave mainly coarse cloths, principally from yarns under 20s.

## Consumption of Cotton Goods

Cotton appears to be better suited for clothing the overcrowded and underfed population of India than any other textile fiber. It is comparatively cheap. It launders well and is otherwise suited for wear in a tropical country where the climate obviates the necessity for heavier clothing.

Total cotton requirements of India are large, but a study of cotton-cloth consumption in 37 countries revealed that India, with 16 yards per capita, was twenty-fourth. This per-capita consumption is about equal to that in China, but smaller than in Iraq, Turkey, Egypt, and Japan, and far below the scale of European and many South American countries, let alone of the United States. Millions of men in India wear only a loin cloth, requiring about 3 yards of cloth, while numerous male laborers w ar a much smaller face-towel style of loin cloth; millions of women can afford no other garment than the sari (the feminine counterpart of the dhuti), while many are compelled to wear only short skirts. The increasing age of nudity among children is another expression of the low purchasing power of the people. These conditions explain the low per-capita consumption of cotton in India. It becomes obvious, then, that it is the huge population of India, estimated at some 350 million, that makes for the large internal consumption of 5.5 billion yards of cotton piece goods annually.

## Imports of American Cotton in Form of Piece Goods

The outstanding result of the rise in the productive capacity of the Indian textile industry was a sharp decline in cotton-cloth imports. The change that has taken place has been described as follows: "In 1913-14, out of every 13.5 yards of mill-made cotton cloth consumed per head in India, 10 yards were purchased from Lancashire and 3.5 yards only were produced in the country. In 1930-31, out of every 9.5 yards of cotton cloth consumed per head in India, only 1.75 yards were purchased from Lancashire, 0.75 from Japan, whereas 7 yards were produced in India." 22/ Subsequent developments have reemphasized this commentary upon India as a market for foreign piece goods, since the increase in output alone in 1936-37 as compared with 1930-31 was larger than average imports for this 6-year period.

The rapid growth of the textile industry in India is of great significance when considering American cotton exports. It has already

22/ A. R. Burnett-Hurst, "Lancashire and the Indian Market," Journal of the Royal Statistical Society, part III, 1932, p. 424.

been mentioned that Indian mills consume a very small volume of American cotton. Obviously, however, a country may be a very important consumer of American cotton without manufacturing it in domestic mills. Ultimate consumption of raw cotton in the form of finished goods may be as far removed from the place of its manufacture as the latter is from the place where the raw cotton is grown. This is true of the consumption of American cotton in India.

As already indicated, the importation and consumption of American raw cotton in India averages less than a hundred thousand bales a year, American cotton being used primarily in the form of imported cotton cloth. It is of importance to determine, therefore, the amount of American cotton consumed in the manufacture of these goods. One way of determining this is to analyze the source of the various kinds of piece goods imported and estimate the quantity of American cotton utilized in their manufacture. This, in turn, calls for a review of the vast changes that have taken place in the cotton-goods trade between the United Kingdom and India on the one hand and Japan and India on the other.

From United Kingdom

In the decade prior to the World War, the United Kingdom enjoyed a monopoly of Indian import trade in piece goods, supplying 97 percent of that country's total cloth imports. Lancashire lost considerable ground in the Indian market during the war as a result of curtailment of production, scarcity of shipping facilities, and Japanese penetration into the market. By 1918-19, England's share had been reduced to 77 percent, while during the same period that of Japan increased to 21 percent compared with less than 1 percent prior to the war. Although British exports to India increased slightly during the middle and late twenties, drastic declines in the thirties assumed catastrophic proportions from the point of view of the English textile industry. The combined action of such factors as rising productive capacity of the Indian textile industry, unsettled conditions in the English industry, agitation against imported foreign goods, high tariff duties, Japanese entrenchment in the Indian market, and low purchasing power of the Indian consumer accounted for the reduction of England's exports of cotton goods to a fraction of the pre-war volume. In 1936-37, imports of British goods into India amounted to only 334 million yards compared with more than 3 billion yards a little more than 20 years earlier.

The decline in Indian imports of cotton goods from the United Kingdom has had a vital bearing upon American cotton exports to that country. The downward trend of British piece goods exported to India is closely associated with the decrease in the consumption of American cotton in the United Kingdom, although the relationship for particular years is not always consistent. The share of American cotton in the total volume of consumption in Lancashire declined from 80 percent during the

5-year period ended with 1912-13 to only 46 percent during the 5 years 1931-32 to 1936-37. More concretely, mill consumption of American in the United Kingdom declined from an annual average of approximately 3,300,000 bales during the 1909-1913 period to only 1,200,000 bales during 1932-1936. Of this loss, about 900,000 bales may be attributed to the shrinkage of English exports of piece goods to India.

Table 3. Estimated equivalent of American cotton used in manufacture of cloth and yarn imports into India and Indian mill consumption of American cotton, average 1902-1906 to 1932-1936

| Years beginning April 1 | Raw-cotton equivalent | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Imports of cotton piece goods a/ | | | | | Imports of cotton yarn f/ | Mill consumption of American raw cotton g/ | Total |
| | United Kingdom b/ | Japan c/ | United States d/ | Other e/ | Total | | | |
| | 1,000 bales | 1,000 bales | 1,000 bales | 1,000 bales | 1,000 bales | 1,000 bales | 1,000 bales | 1,000 bales |
| Average | | | | | | | | |
| 1902-1906. | 982 | - | 4 | 7 | 993 | 62 | 13 | 1,068 |
| 1907-1911. | 999 | - | 4 | 10 | 1,013 | 67 | 22 | 1,102 |
| 1912-1916. | 1,015 | 8 | 5 | 11 | 1,039 | 73 | 17 | 1,129 |
| 1917-1921. | 403 | 32 | 7 | 4 | 446 | 62 | 21 | 529 |
| 1922-1926. | 412 | 40 | 5 | 8 | 465 | 92 | 80 | 637 |
| 1927-1931. | 292 | 91 | 12 | 12 | 407 | 70 | 89 | 566 |
| 1932-1936. | 103 | 123 | 5 | 2 | 233 | 64 | 47 | 344 |

Bales of 478 pounds net.

a/ Based upon cloth import statistics reported in the Annual Statements of the Sea-Borne Trade of British India, Department of Commercial Intelligence and Statistics, India.

b/ Computed from cloth-yardage figures for imports from the United Kingdom, approximate average weights per yard of cloth exported from the United Kingdom to India, estimates of the proportion of American cotton used by British mills, and an allowance of about 11 percent for waste.

c/ Computed from yardage figures for cloth imports from Japan and the factors indicated in footnote b as they apply to Japanese cloth.

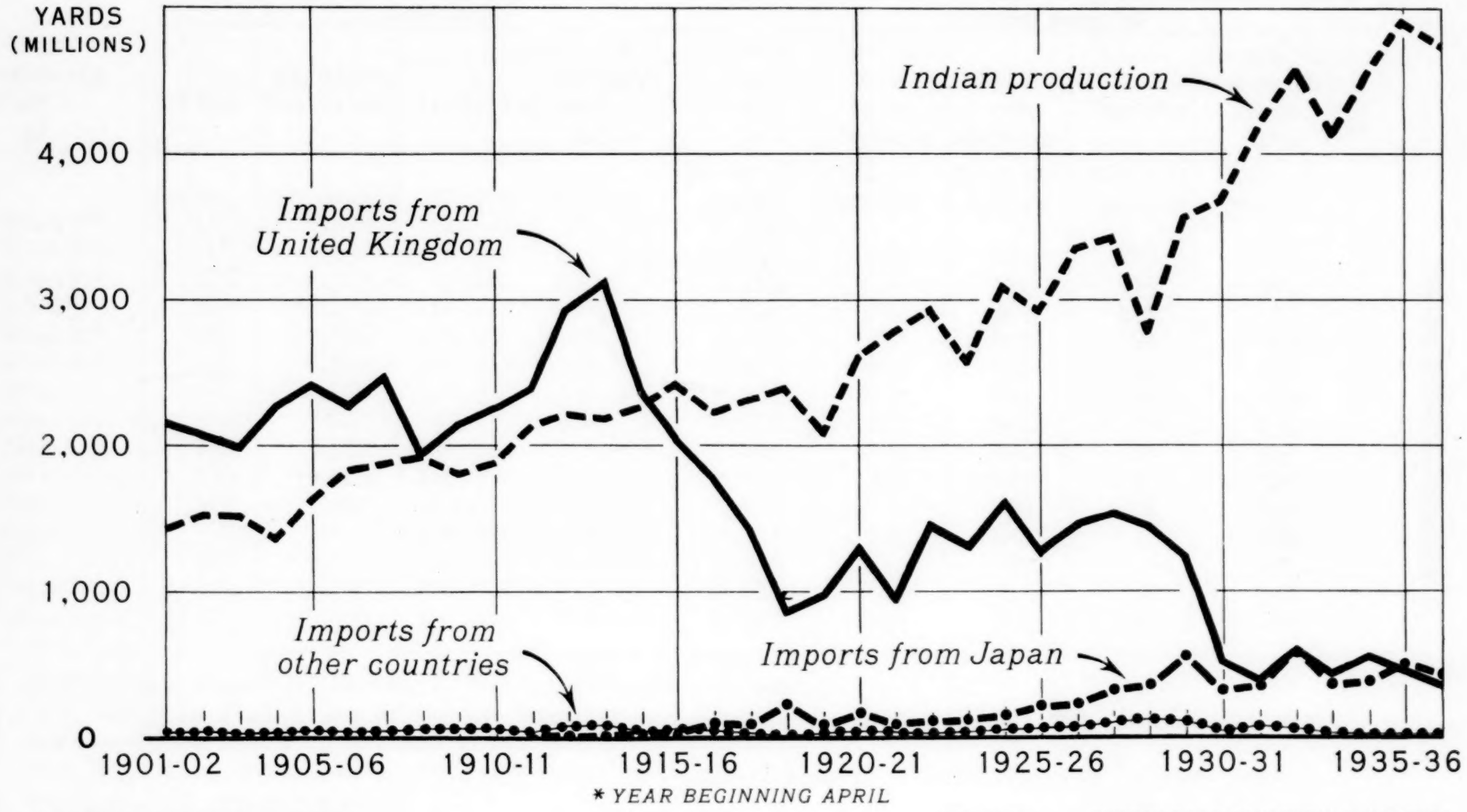
d/ Imports of cloth from the United States assumed to be made from American cotton. Other factors are the same as in footnote b except that they were varied to fit conditions with respect to cloth from the United States.

e/ See footnote b. Factors indicated above were varied in accordance with estimated weights, etc., of the yardage of cloth imported from these countries.

f/ Converted from poundage figures for yarn imports, assuming 75 percent American cotton and about 11 percent waste.

g/ Prior to 1920-21 based upon import and export figures; 1920-21 to 1926-27, International Federation; and 1927-28 to 1936-37, New York Cotton Exchange. These figures are for seasons beginning August 1.

## COTTON CLOTH: PRODUCTION AND IMPORTS, INDIA, 1901-02–1936-37*




* YEAR BEGINNING APRIL

U. S. DEPARTMENT OF AGRICULTURE NEG. 31004 BUREAU OF AGRICULTURAL ECONOMICS

FIGURE 1

Table 4.

Progress of cotton mills in British India and Native States, and cotton-yarn production and distribution, 5-year averages 1900-1904 to 1925-1929, and yearly 1928-1936

| Year beginning July 1 c/ | Cotton a/ | | | | | Cotton yarn b/ | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Mills | Spindles installed | Looms: Installed | Looms: Average employed daily | Cotton consumed d/ | Production plus imports | Mill consumption | Exports | Consumption on hand looms, etc. |
| | Number | Thousands | Number | Number | Thousand Bales | Million pounds | Million pounds | Million pounds | Million pounds |
| 1900-1904. | 192 | 4,946 | 41,410 | 171,722 | 1,278 | | | | |
| 1905-1909. | 214 | 5,330 | 54,900 | 203,113 | 1,539 | 692 | 188 | 245 | 259 |
| 1910-1914. | 265 | 6,333 | 85,612 | 239,724 | 1,615 | 694 | 270 | 175 | 249 |
| 1915-1919. | 267 | 6,772 | 110,712 | 271,796 | 1,716 | 691 | 369 | 135 | 187 |
| 1920-1924. | 280 | 7,116 | 128,086 | 325,317 | 1,675 | 732 | 408 | 60 | 264 |
| 1925-1929. | 336 | 8,589 | 158,745 | 368,563 | 1,709 | 805 | 516 | 30 | 259 |
| 1928..... | 344 | 8,907 | 174,992 | 346,925 | 1,728 | 692 | 446 | 24 | 222 |
| 1929..... | 348 | 9,125 | 179,250 | 384,022 | 2,058 | 878 | 562 | 25 | 291 |
| 1930..... | 339 | 9,312 | 182,429 | 395,475 | 2,106 | 896 | 590 | 23 | 283 |
| 1931..... | 339 | 9,506 | 186,341 | 403,226 | 2,329 | 998 | 672 | 23 | 303 |
| 1932..... | 344 | 9,581 | 189,040 | 400,005 | 2,270 | 1,061 | 695 | 16 | 350 |
| 1933..... | 352 | 9,613 | 194,388 | 384,938 | 2,163 | 953 | 646 | 17 | 290 |
| 1934..... | 365 | 9,685 | 198,867 | 414,884 | 2,499 | 1,035 | 737 | 13 | 285 |
| 1935..... | e/379 | 9,857 | 200,062 | 417,803 | 2,488 | 1,103 | 762 | 10 | 331 |
| 1936..... | f/370 | 9,731 | 197,810 | 417,000 | 2,580 | 1,082 | 782 | 12 | 288 |

a/ From annual report of The Mill Owners' Association, Bombay.
b/ From Monthly Statistics of Cotton Spinning and Weaving in Indian Mills' and Annual Statement of the Sea-Borne Trade of British India.
c/ Year beginning September 1, 1913-1935 for "cotton"; and April 1 from 1905 for "cotton yarn."
d/ Bales of 478 pounds net.
e/ Does not include 47 mills in the course of erection.
f/ Review of the Indian Cotton Textile Industry, 1937 (John J. Macdonald, American consul).

The estimated loss to American cotton due to reduced imports of British piece goods is of necessity only a rough approximation, but it is based on examination of the best available data. These show that the raw-cotton equivalent of cloth exported from the United Kingdom to India was approximately 1,200,000 bales during the 5 years ended with 1912-13, against only 150,000 bales in the corresponding period ended with 1936-37. Since it is estimated that in the earlier period about 95 percent, and in the latter period only a little over 65 percent, of this cotton was American, the use of American in the manufacture of cloth by British mills for exports to India has decreased from an annual average of about 1 million bales a quarter of a century ago to about 100,000 bales in recent years.

From Japan

A small part of the loss sustained by American cotton in the United Kingdom was offset by the rapid rise in the Japanese exports of cotton goods to India. This rise is associated with an increase in the consumption of American cotton by the Japanese industry. Although the correlation between the two is by no means perfect, the trends in the two series coincide fairly well. But increased exportation to India is only one factor in the rapid growth of the Japanese cotton-manufacturing industry, which explains the phenomenal increase of Japanese imports of American cotton. 23/

In 1913-14, India imported from Japan a total of only 9 million yards of cloth, or 0.3 percent of the total imports. During the war and post-war years, Japan established a strong foothold in the Indian market, based almost exclusively on its ability to undersell both British and native goods. From 1922-23 to 1926-27, Indian imports from Japan averaged about 170 million yards, and rose to a peak of 580 million yards in 1932-33, but it was not until 1935-36 that Japanese imports outstripped those from Great Britain. As a result of the quota arrangement, coupled with a high discriminatory tariff, imports from Japan have leveled off in recent years to an average of about 400 million yards.

In terms of raw-cotton equivalent, Japanese cloth exports to India have increased from practically none in the pre-war period to about 250,000 bales during recent years - of which American cotton probably constituted about 60 percent, or approximately 150,000 bales.

Estimated Loss in Consumption of American Cotton

By far the greater part of the reduction in the final consumption of American cotton in India has been associated with the drastic decline in Indian imports of cotton cloth from the United Kingdom. The gain in imports of Japanese cloth, made partly from American cotton, has been

23/ See Foreign Agriculture, No. 12, 1937, pp. 607-608.

negligible compared with the effects of the shrinkage in British exports. Small quantities of cloth are also imported from the United States and a few other countries, but these, too, have declined.

Indian imports of cotton yarn have remained fairly stable; but the raw-cotton equivalent of cotton yarns has averaged only 80,000 bales, American cotton probably accounting for 75 percent of the total. In addition to piece goods, certain other cotton textiles are imported into India, and these doubtless contain some American cotton. Among these miscellaneous textiles are blankets, canvas, handkerchiefs, lace, sewing thread, hosiery, and underwear. Since the aggregate quantity of cotton used annually in these articles apparently amounts to no more than a few thousand bales and there is no satisfactory method for estimating their content of American cotton, these textiles have not been included in computations of the final consumption of American cotton in India.

During the pre-war period an annual average of more than a million bales of American cotton is estimated to have been consumed by the people of India. The average for the 5 years ended with 1915-16 was about 1,100,000 bales. For the next 15 years, the annual average was less than 600,000 bales, and for the 5 years 1932-1936, only 340,000 bales, or a net loss of some 760, 000 bales compared with pre-war consumption.

## Conclusion

The drastic reduction in the ultimate consumption of American cotton in India is one of the results of the general shift in cotton consumption from Europe to the Orient. This tendency has been accented since the World War.

The two dominant factors responsible for the sharp decline in the final consumption of American cotton in India were, first and by far the most important, increased manufacture of piece goods by Indian mills, accompanied by drastic curtailment in imports of British cotton piece goods that were only partially replaced by imports from Japan; second and less significant, reduced consumption of cotton goods, attributed to a decreasing purchasing power of the Indian people and to the effects of a high tariff.

The poverty of the Indian people is so great that for some years to come there is little prospect of a rise in the per-capita consumption of cotton cloth. It follows that any attempt to evaluate the future position of American cotton in that market will be conditioned by the ability of the Indian textile industry to satisfy all domestic requirements. Inefficient though the Indian industry is, it has, nevertheless, been able, with the help of the mounting import barriers, to keep down imported goods to about 25 percent of the pre-war volume. In recent years Indian mill production increased rapidly in volume and improved in quality and range.

Imports in the future will be limited to those textiles of higher counts and finer qualities that the mills are not at present equipped to produce. Under the circumstances, exports of American cotton to the United Kingdom and Japan are likely to be reduced accordingly.

Other elements, however, might stimulate an increase in exports of American cotton to India or to other cotton-consuming countries. With the continued increase in the Indian cotton-cloth output, the bulk of which will undoubtedly be manufactured from short-staple cotton, the demand for domestic cotton is bound to increase. This may result in a smaller volume of Indian available to compete with American in the world markets, unless, of course, the rise in Indian cotton production should outstrip the increase in domestic demand. Furthermore, the tendency to spin finer-count yarns in Indian mills calls for an increase in the consumption of American cotton or some other growth of better quality than most Indian cotton. This tendency, together with relatively low prices of American cotton, seems to be the principal cause of the current increase in American cotton exports to India.

It must be emphasized, nevertheless, that even at best the two factors tending to stimulate larger consumption of American cotton will only partly offset the estimated annual average loss of nearly 800,000 bales sustained during the last quarter of a century. The fact is that India is fast approaching national self-sufficiency in cotton-textile requirements. It can readily be seen that as cotton-producing countries, such as India, continue to expand their tariff-protected domestic textile industries and to reduce imports from cloth-exporting countries, such as the United Kingdom, foreign consumption of American cotton is likely to be further curtailed. Expansion of the industry and curtailment of imports have been the main features of Indian post-war economic policy, and there is no indication of a change in this policy. It seems likely, therefore, that final consumption of American cotton in India will remain at materially reduced levels.

# CERTAIN ECONOMIC IMPLICATIONS OF THE AUSTRO-GERMAN UNION . . .

By Loyd V. Steere*

The union of two nations with a population totaling 75 millions is an event of profound significance, both politically and economically. Any appraisal of the political consequences of the recently concluded Austro-German union would be of doubtful value at this time. Certain conclusions, however, can be drawn with respect to probable economic repercussions.

In the Austro-German union, a rapid and complete consolidation may be expected to follow the political merger already effected. Monetary union was provided for in an official decree already issued, and the first steps toward a customs union will be introduced as rapidly as conditions permit. General Goering has likewise announced that the Four-Year Plan activities will be extended to Austria as quickly as possible. Other steps indicate that the German system of economic controls will also be introduced throughout Austria at an early date.

The unfavorable economic developments that these events presage would arise mainly from the three measures necessary to fit Austrian economy into that of Germany; namely, (1) extension to Austria of drastic control and restriction of imports, (2) rigid control of foreign exchange in Austria as in Germany, and (3) adjustment of prices in Austria to those in Germany. Judging from all the experience of recent years, these measures might well bring about a marked dislocation of economic relations in all the areas concerned.

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Broadly speaking, the general effects would likely be (1) a serious diminution in the volume of exports moving from foreign countries to Austrian territory; (2) a drop in Austrian exports, 1/ against which Austria would find some offsetting gains from increased trade with Germany proper and from Government encouragement to internal economic revival; and (3), in Germany proper, a somewhat increased supply of certain raw materials and of livestock products from Austria, though Germany might well find the new territory, on the whole and for a time at least, an economic burden, with its population expecting aid at a time when the Reich's resources were already strained. Austria now will also be called upon to share the shortages of many products and the widespread use of substitutes prevalent in Germany.

As to the effects of an economic union upon trade between Austria and Germany proper and upon the position of greater Germany vis-a-vis the rest of the world, it must at once be recognized that the two countries are in no sense complementary economies. On the contrary, they are very much alike in economic structure. Both are large importers of foodstuffs and raw materials and large exporters of industrial products. Only about one-sixth of Austria's total foreign trade has been with Germany, and but 2 percent of Germany's with Austria. There are undoubtedly possibilities for greatly increasing trade between the two areas once customs barriers are removed; yet it is perfectly clear that neither area can supply the other to any great extent with products hitherto secured from other countries.

For Austria, the union with Germany is of epic importance, economically, and it may result in some fundamental changes. From an economic point of view, Austria seems certain to gain more from the union than will Germany. This follows, almost inevitably, from the great differences in the size and population of the two countries (67 million against 6.7 million), as well as from the differences in economic structure and activity. Thus, Austria may experience a considerable curtailment - and even permanent readjustment - in manufacture for export; yet there is little question of Germany's capacity to provide substitute employment and even to stimulate much increased employment for Austrian labor under present conditions. All of this refers, of course, to the near future - the next year or two; beyond that the prospect is one of sharing Germany's success or failure in solving the fundamental problem of trade relations with the rest of the world.

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1/ It will be noted that Austria has already been removed from the list of countries receiving most-favored-nation treatment from the United States and thus will not obtain the benefits of lower duties provided in the various United States trade agreements.

For Germany, the incorporation of Austria is but a phase, a further step, in the course she has been pursuing, economically, for the past 5 years. For the near future, at least, it necessitates no important change in policies, it makes no countributions to the solution of Germany's export problems and but modest contribution to the raw-material problem, and it supplies only very minor quantities of needed foodstuffs.

## Structure of Austrian Agriculture

The similarity of general economic structure reflected in German and Austrian foreign trade extends in considerable degree to their agriculture, though certain differences must be distinguished, particularly in appraising probable future developments. The most significant similarity is in respect to their degree of self-sufficiency in foodstuff supplies, Germany producing about 81 percent of total requirements and Austria about 76 percent. They are also alike in that both are heavily deficient in the production of basic feedstuffs and fats. Both are also large importers of fruits and vegetables, as well as of a considerable number of minor agricultural products. These fundamental weaknesses will not be solved by the union of the two countries.

The two chief differences are in the livestock industries and in the production of bread grains. Austria is heavily dependent upon imported bread grain, whereas Germany is near to self-sufficiency in normal years. Of much more importance, from the standpoint of the union of the two countries, however, is the fact that Austria produces a modest surplus of dairy products and would seem to have potentialities for expansion of the dairy and beef-cattle industries, whereas Germany has a large deficit in dairy products and also imports a limited number of live cattle. Other agricultural differences are relatively minor in character, unless forestry products are included. Austria is an important surplus producer of these, whereas Germany is heavily dependent upon imported supplies. The two definitely supplement each other in this respect.

These differences in structure arise directly from the topography and land resources of the two countries, regarding which the most striking fact is that Austria has about 50 percent more land than Germany, per capita, in agricultural use. This figure, however, is deceiving, inasmuch as the areas under actual cultivation are almost identical on a per-capita basis, or about 29 hectares per 100 of population in Germany as compared with 30 in Austria. The great discrepancy arises from the difference in the areas under permanent meadows and pastures, of which Austria has 33 hectares per 100 population as compared with only 13 in Germany. The result is that the livestock industry is relatively

much more important in Austria, with about 25 percent more cattle, per capita, in Austria than in Germany and with hogs correspondingly more numerous, though for different reasons. That these differences in the use of the land have not resulted in greater dissimilarity in agricultural production and relative self-sufficienty is explainable by the fact that the productivity of field crops in Austria averages lower than in Germany but is offset by greater total production on pasture and meadowland.

The greatest possibilities for increasing agricultural output in Austria seem to lie in the direction of livestock production - first of beef cattle and second of dairy products; likewise, there may well be considerable possibilities for fruit. Such developments would, of course, be undertaken mainly with an eye to supplying the market in Germany proper. It would also seem to be a part of German policy to attempt to reduce Austrian dependence upon agricultural imports wherever possible, especially of grains, pork, fruits, and vegetables. In field crops, Austria has almost no possibilities of contributing to German supplies, though there is some chance of obtaining higher yields through more intensive farming.

## Influence of Austro-German Price Adjustments

The future course of agricultural production in Austria, and especially the determination of what crops will be raised, depends to a marked extent upon prices and price relationships. In fixing a conversion rate of 1.50 schillings to 1 Reichsmark to bring about monetary union, the authorities appear to have selected a figure that will mean a minimum of shock to the Austrian price structure. Nevertheless, as must be expected with any such measure, there will be unavoidable and substantial changes in the prices of certain agricultural products in order to bring them into parity with prices of the same products in Germany proper. These changes will be sure to have an effect upon production in proportion to their magnitude, although it is to be expected that special measures will be adopted to prevent undesirable shifts and to relieve any undue hardships thus imposed.

## Probable Effects Upon American Farm Exports

In all probability, the Austro-German union will immediately begin to affect American exports to Austria through the extension of the German foreign-exchange and import controls. It may be expected that these controls will be administered in Austria in the same way that they are in Germany - at least as soon as they come into full operation. In short, there will be a further curtailment

in the already reduced quantities of our farm products going to this area, and imports will be permitted from the United States only on a general barter basis in the case of cotton, or by special permit or approval for such commodities as tobacco and dried and fresh fruits.

Austrian imports of principal agricultural products from the United States, 1933-1937

| Commodity and source | Unit | 1933 | 1934 | 1935 | 1936 | 1937 a/ |
|---|---|---|---|---|---|---|
| | | Thousands | Thousands | Thousands | Thousands | Thousands |
| Cotton - | | | | | | |
| United States | Bales | 85 | 82 | 93 | 108 | 87 |
| Total..... | " | 129 | 152 | 174 | 197 | 197 |
| Prunes - | | | | | | |
| United States | Pounds | 629 | 2,601 | 5,127 | 6,603 | 5,236 |
| Total..... | " | 6,021 | 6,029 | 6,244 | 10,887 | 7,375 |
| Raisins - | | | | | | |
| United States | " | 208 | 140 | 425 | 207 | 802 |
| Total..... | " | 6,361 | 6,497 | 7,439 | 6,629 | 8,083 |
| Tobacco - | | | | | | |
| United States | " | 788 | 2,473 | 1,116 | 878 | 692 |
| Total..... | " | 24,506 | 20,886 | 21,769 | 15,896 | 17,322 |
| Lard - | | | | | | |
| United States | " | 6,334 | 915 | 190 | 220 | 456 |
| Total..... | " | 6,668 | 916 | 235 | 569 | 1,539 |
| Apples - | | | | | | |
| United States | Bushels | 197,054 | 402,000 | 82,144 | 210,319 | 90,265 |
| Total..... | " | 765,185 | 512,951 | 363,888 | 612,273 | 509,483 |

Compiled from official sources.
a/ Preliminary.

Specifically, our greatest losses can be expected in takings of cotton, of which Austria has maintained her normal imports to the present time. These will probably now be reduced as rapidly as substitute staple fiber, reclaimed cotton, cotton waste, and other foreign growths can be obtained. This process may be a fairly rapid one. Also, a sharp curtailment may be anticipated in imports of dried prunes and apples, Austrian takings of which have been of some importance. Imports of American tobacco will suffer relatively less, since the Monopoly's use of American leaf

cannot readily be discontinued on short notice. Other minor products, such as raisins and lard, will also be affected, but periodical shortages of lard in Austria may still enable the American product to find its way in.

# THE SINO-JAPANESE CONFLICT - EFFECT ON CHINESE AGRICULTURAL PRODUCTION AND TRADE . . .

Hostilities that began in China during the late summer of 1937 have already had a significant effect upon Chinese agricultural imports and exports, and they will affect many important Chinese crops in 1938. The outlook for Chinese agricultural production and trade will change as hostilities continue to alter the territory under the control of the Chinese Government and the Japanese forces. This article sets forth some of the effects of the conflict to date and points out certain possible developments in the near future.

The area now under Japanese control contains two-fifths of the wheat acreage, three-fifths of the cotton land, and two-thirds of the flue-cured tobacco acreage in China. In addition, nearly 90 percent of the Chinese flour mills, cotton mills, and cigarette factories are located in areas now occupied by the Japanese. On the other hand, nearly 90 percent of the rice acreage, the basic food crop for three-fifths of the Chinese people, is still under the Chinese Government.

## Importance of Agriculture in China

China, the United States, India, and the Soviet Union are the world's four largest agricultural countries. More than three-fourths of China's vast population are normally engaged in various agricultural pursuits. Agricultural production is the backbone of China's national economy, and exports of agricultural commodities are vital to China's foreign trade. They represent from 70 to 85 percent of the total value of annual exports.

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Prepared by Fred J. Rossiter, agricultural economist, Bureau of Agricultural Economics, on the basis of reports from the Bureau's Shanghai office and American consulates.

Available information indicates that China leads all countries in the production of rice, soybeans, millet, barley, kaoliang (a grain sorghum), peanuts, sweet potatoes, wood oil, and a number of minor crops. In wheat production, China ranks with Russia and the United States as one of the three leading producers. In total tobacco production, China ranks with the United States and India, and in cotton production is third after the United States and India.

## Recent Government Efforts to Improve Agriculture

Prior to 1935, China's production of several important agricultural commodities was inadequate for the country's requirements. It was necessary each year to import increasing quantities of rice, wheat, wheat flour, raw cotton, cotton textiles, and flue-cured tobacco. In 1931, therefore, the Chinese Government set out to reduce the deficiency of these staple products, in which it felt the country should be self-sufficient. By imposing higher import duties, improving transportation facilities and rural credit, and developing agricultural experimental and extension work, the Government had greatly reduced agricultural imports by the end of 1936. In fact, the country had arrived at a point where it was practically self-sufficient in wheat, wheat flour, and raw cotton, and imports of rice and flue-cured tobacco were at the lowest level in many years.

Production of most crops in China was average or above in 1936, and the production of some commodities was the highest on record. In addition, farm prices were favorable. Improved credit and marketing facilities resulted in larger returns to the farmers. This, in turn, stimulated increased acreages of cash crops, such as cotton and tobacco, for 1937.

The stable, centralized Chinese Government, which had already greatly improved the national economy and the livelihood of the rural people, continued its work in 1937 with greater emphasis. Cotton acreage was increased 13 percent above the record 1936 plantings, and flue-cured tobacco planting was approximately 10 percent above the preceding year's record. Crop prospects in most sections of the country were considered good, prices continued at a fairly high level, and everywhere economic conditions were reported favorable. The outlook was for continued betterment in rural buying power and improvement in national economic welfare when the Sino-Japanese conflict broke in midsummer.

Total crop production in 1937 was actually somewhat below the good harvest of 1936. Unfavorable weather conditions reduced the yields of such crops as winter wheat, cotton, corn, millet, and kaoliang. Rice and flue-cured tobacco crops, however, exceeded the good 1936 harvests.

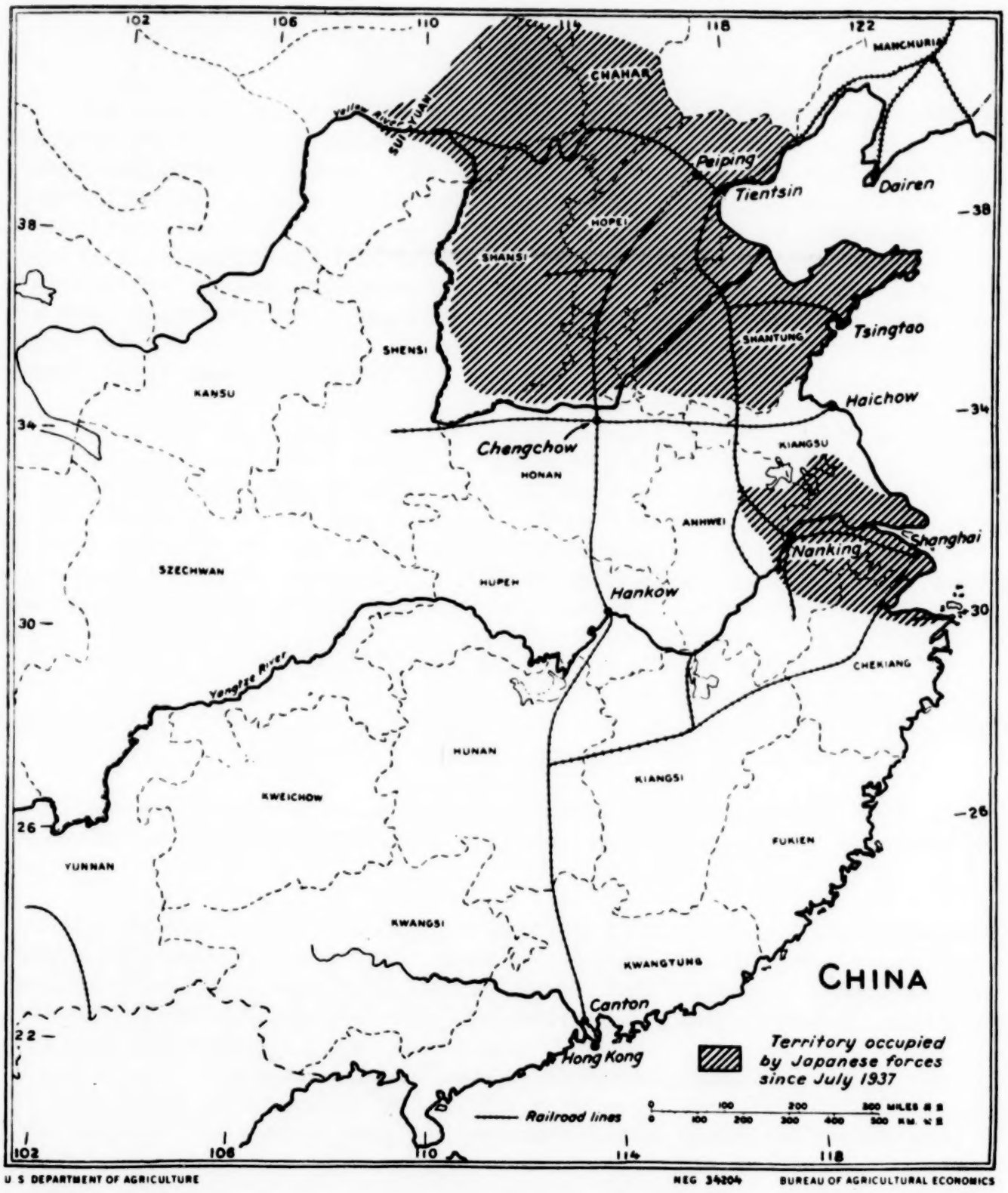


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FIGURE 1.

PHYSICAL CONTROL BY THE JAPANESE FORCES IN THE AREAS SHOWN IS FOR THE MOST PART LIMITED TO STRATEGIC CITIES, RAILWAYS, AND MOTOR HIGHWAYS. MANY OF THE INTERIOR VILLAGES IN THESE AREAS ARE STILL UNDER LOCAL CHINESE AUTHORITIES.

## Effect of Hostilities

The crop losses in 1937 resulting from hostilities were small in comparison with total production. Most of the fighting took place along railways and motor highways. In the interior, away from the main lines of communication, a relatively small amount of destruction occurred in the territory now controlled by Japan. But marketing of practically all agricultural commodities has been very seriously disrupted. Either transportation routes have been completely cut off or facilities that do exist have been used very heavily for military purposes. The Japanese blockade of China's ports on August 25, 1937, considerably reduced the movement of Chinese raw materials and manufactured products.

Shanghai, the most important agricultural market and industrial center in China, has been seriously affected by the hostilities. Many of the cotton mills, flour mills, cigarette factories, and silk filatures have been destroyed or badly damaged. Principal sources of raw materials have been largely cut off since hostilities began. Chinese wheat, raw cotton, leaf tobacco, rice, silk cocoons, and other farm products have at times been unable to reach the Shanghai market. At present, only a small area is available for furnishing Shanghai with Chinese farm products. On the other hand, the demand for Shanghai's industrial products has been greatly reduced because of (1) the inability of factory goods to reach the interior of China, (2) the large decrease in population in the Shanghai area, and (3) the decreased purchasing power of the Chinese people.

What has occurred at Shanghai has taken place, to a lesser extent, in other industrial centers under Japanese control, such as Tsingtao and Tientsin.

A much smaller percentage of China's 1937 crops is being processed in large industrial plants this season. Though such plants in Chinese-controlled territory have been operating at full capacity, their number is limited. Home industries, such as weaving, grinding wheat, and making hand-rolled cigarettes, have increased.

The total consumption of cotton yarn and cigarettes undoubtedly will be reduced this crop year on account of the diminished income of a large number of people. Farm prices for most of the 1937 crops have been lower than during the preceding year. In addition, the number of people on factory pay rolls during the past 8 months was much below that of a year ago.

Since hostilities began, China's foreign trade in agricultural commodities has been greatly diminished on account of disrupted transportation and reduced purchasing power. Exports of Chinese agricultural commodities, such as wood oil, silk, tea, hides and skins, peanuts, walnuts, carpet wool, and eggs and egg products, are below those of the

corresponding period during the 1936-37 season. In the Chinese-controlled section, new routes are being opened in an effort to maintain as large exports as possible in order to furnish exchange for necessary war supplies. Exports from the territory controlled by the Japanese have been smaller than last year, as agricultural commodities cannot reach the principal ports in as large a volume.

Imports of most agricultural goods into China have been greatly reduced during the past 8 months. Imports of American raw cotton were smaller, since the mills that have been operating have decreased the production of fine-count yarn. The production of, and demand for, better-grade cigarettes have been much below normal, and consumption of American flue-cured tobacco has thus been diminished. Imports of American oranges, apples, and raisins have been considerably reduced this season. Because of the short 1937 wheat crop, it was expected that China would increase imports of wheat this crop year; but, since the Shanghai flour mills have for the most part been unable to ship flour to their regular markets, practically no foreign wheat has been sold to China this season. The importation of foreign flour, however, has increased substantially. A small increase in imports of flour from the United States and Australia has taken place in South China, while much larger quantities of Japanese-made flour have been imported into North China.

## Developments in the Chinese-Controlled Area

The Chinese Government, formerly located at Nanking, developed a large amount of its agricultural and economic improvement work in the coastal Provinces. It has been necessary to abandon most of these projects and, with the removal of the Government to Hankow and West China, a new program for increased production is being promoted in the interior and South China Provinces. More emphasis is now being placed on increased production in order to insure sufficient food supplies. No information is available to indicate to what extent an increased winter-crop acreage has taken place. It is possible, however, to increase the winter crops considerably in several sections of South, Central, and West China, since many rice fields in normal years are left fallow during the winter months. Several months ago, it was also announced that the opium poppy - a winter crop that was still being grown in some of the hinterland Provinces - was not to be planted this year.

Agricultural production is now being planned along the lines of self-sufficiency. It is believed that sufficient rice and wheat will be produced, if normal yields are obtained, in the area now controlled by the Chinese Government. This area, which has but two-fifths of China's cotton acreage, will not furnish sufficient raw cotton. It is probable, however, that Chinese yarn made at Shanghai will continue to be sold to South China.

The handicraft industries are being increased to supply local needs because of the difficulties in transportation, which have retarded the movement of manufactured products from the factories. Some cotton and flour mills will be removed to, or developed in, safer cities in the interior. Highways are being built to open overland routes and connect China with the countries lying to the southwest. It is expected that oil wells will be developed in Szechwan Province.

Thus, the force of hostilities affecting China is bringing about greatly increased activity in the inland Provinces. The purchasing power of the people probably will not be increased, however, as it will be necessary to collect heavier taxes to replace the large amounts formerly received in the area now occupied by the Japanese. The Chinese Government no longer obtains the large sums formerly collected as import duties at the large port cities or the internal revenue from cigarette factories and cotton and flour mills or the salt taxes collected from beds in the area now controlled by the Japanese.

## Developments in the Japanese-Controlled Area

Some shifts in agricultural production and trade are expected in the parts of China that have come under Japanese control during the past 8 months. Japanese officials have frankly admitted that they wish this territory in order to furnish raw materials for Japanese industry and as a market for Japanese goods. The population of the territory in normal times exceeds 110 million. At the present time, in spite of a large exodus, the population probably approximates 90 million, or 20 million more than the total population of Japan proper. In North China, a provisional government has been set up at Peking by the Japanese army. The Japanese Cabinet has approved a new Central China government to be established at Nanking under the guidance of the North China provisional government.

Japanese plans for economic development in North China were clearly set forth in a statement by a member of the Board of Planning of the Japanese Cabinet. The plans as reported include:

1. Exploitation of a Lungyen iron mine in southern Chahar Province (said to be the largest iron deposits in China).
2. Increased production of salt in Hopei Province and larger exports to Japan.
3. Exploitation of coal mines in Hopei and Shansi Provinces.
4. Increased production of North China cotton and improvement of quality.
5. Purchases of a larger quantity of raw wool from North China.
6. Construction of new railroads.
7. Improvement of other means of communication, namely new harbors, new highways, and telegraph and telephone systems.

8. Development of electric power for use of cotton mills and other industrial projects.

Japanese plans for developing the occupied territory in China reached a formative stage on March 24, when it was reported that the Lower House of the Diet authorized the organization of the North China Development Company and the Central China Promotion Company. The North China Company will be capitalized at 350 million yen ($102,000,000) and the Central China Company at 100 million yen ($29,000,000). The Government will underwrite half the capitalization of each company. The companies, it is reported, will develop mines, build railroads, plant cotton, and institute flood control.

The provisional government of Peking put into effect during January 1938 a revised tariff schedule for North China. The recent tariff rates are chiefly for the purpose of facilitating trade with Japan by providing larger import outlets for Japanese manufactured goods and giving Japan freer access to China's raw products. For example, rates on imported cotton, woolen, and rayon textiles were lowered from 25 to 75 percent. Wheat flour, which formerly paid an import duty of 18 cents per bag of 49 pounds, is now temporarily imported free of duty. Chinese raw cotton, cottonseed, and linseed, export duties on which formerly were from approximately 7.5 to 10.5 percent ad valorem, are now exported duty-free. Wool, bristles, and bran export duties have been reduced from 5, 7.5, and 7.5 percent, respectively, to 2.5 percent ad valorem. In the Shanghai area, no change in duty rates has yet been announced.

The provisional government at Peking has organized a new central bank of North China, to be called the National Federal Reserve Bank, for the purpose of furthering Sino-Japanese trade. The capital is to be subscribed by the Government and eight local member banks, which include the leading Chinese and Japanese banks in Peking and Tientsin. The new bank does not intend to engage in commercial banking but is primarily for the issuance of a new currency, which is to be linked with the Japanese yen. Furthermore, the provisional government has asked the Japanese bankers for a credit of 100 million yen to establish an exchange fund.

No information is available to indicate to what extent the new bank has begun to function. It has been reported that the military authorities have had some difficulty in reaching an agreement with the leading Chinese banks, which wished to retain a free currency if possible. The use of the new currency will be limited for some time, owing to disturbed political conditions, disrupted communications, and the slow progress of public confidence. Efforts have frequently been made to use yen notes in the interior, but these are generally refused by the farming population.

## Present Outlook

The agriculture of the territory under Japanese control is of much greater interest to the United States than that of the Chinese-controlled area. In the former territory, production of wheat and rice is usually insufficient for domestic needs but the production of cotton and flue-cured tobacco is generally in excess of domestic consumption.

Because of the uncertainty engendered by the continuation of hostilities, Chinese farmers in this territory are not likely to risk planting a large acreage of cash crops, such as cotton and tobacco, preferring to plant those crops needed for their own consumption. Failure to move surplus farm stocks of cotton and tobacco out of this territory within the next few weeks at favorable prices will undoubtedly mean a reduction in the acreage of these cash crops in 1938.

Agricultural imports into the territory controlled by the Japanese appear likely to include rice, wheat flour, cotton and woolen textiles, and perhaps some types of leaf tobacco. Under present conditions, however, this area is expected to take less American farm products than it has for several decades. Furthermore, the continuation of Japanese control will probably result in a gradual reduction in the amount of American flue-cured tobacco used by Shanghai cigarette factories.

Present prospects are that the wheat deficit in the North China area controlled by the Japanese will be supplied by flour imports from Japan and Manchuria. In past years, this deficit was normally supplied by shipments of flour manufactured in Shanghai from Yangtze Valley wheat. It seems likely that the needed rice imports will be imported from the surplus-producing countries of southern Asia and possibly from Chosen, as that country has a considerable surplus this year.

The area under Japanese control normally exports several agricultural commodities that the United States purchases direct or that enter into competition with American goods in other foreign markets. These include peanuts, walnuts, carpet wool, hides and skins, eggs and egg products, flue-cured tobacco, and raw cotton. The exports of all of these commodities have been greatly reduced since last summer, largely as a result of disrupted transportation facilities.

The primary interest of Japan in the agriculture of this region appears to be in increasing the volume and improving the quality of the cotton crop. If growers can be induced to plant an acreage equal to that of the past 2 years, Japan can obtain a substantial quantity of cotton, probably 500,000 bales or more annually.

Production of flue-cured tobacco in the area under Japanese control is centered largely in Shantung Province. In the past, this tobacco has

been used largely by cigarette factories in China, although from 20 to 30 million pounds have been exported annually to Manchuria and from 1 to 3 million pounds to Japan. In the long run, it is expected that tobacco production will be encouraged with a view to increasing exports.

The production of most agricultural commodities in the area under Chinese control has never been of great direct significance to the United States. This territory is largely a producer of foodstuffs, particularly rice. The principal export product is wood oil, fully 95 percent of China's production coming from this area. The expected reduction in the foreign trade of this area in 1938, therefore, should not greatly affect American agricultural interests.

Imports into this area are expected to be very small because the principal port of entry (Shanghai) is now under Japanese control. Furthermore, such imported goods as can be obtained are high in price and the purchasing power of the population has been reduced.

Exports also are expected to be small, not only because of inadequate transportation facilities, but because most of the crops produced will be needed for domestic consumption. Wood oil will no doubt be exported in reduced volume as long as the Yangtze River remains closed. Limited quantities of wood oil, however, together with some dried-egg products and hides and skins, can be shipped from Central China by railroad to Canton for export. Silk and tea, approximately 50 percent of the Chinese production of which occurs in the area now under Chinese control, will undoubtedly be exported in smaller volume.

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## MEXICO CONSIDERS NEW AGRICULTURAL PROGRAM

The Mexican Ministry of Agriculture and Development has decided to reorganize the agriculture of Mexico into a new economic structure designed to bring about a more rapid expansion in production, according to a report received in the Bureau of Agricultural Economics from the American Embassy at Mexico City.

Legislation deemed essential to accomplish this objective is now being considered. Preliminary reports indicate that in order to increase production and to facilitate the exchange of farm products between various producing groups an attempt will be made to organize producers along lines of specialized production and to impose a tax on farmers and livestock breeders who are not organized.

It is proposed also to launch an intensive campaign by means of the press, the radio, pamphlets, lectures, and demonstrations for the purpose of increasing acreage, improving quality, and encouraging expert seed selection and increased use of fertilizers. Attention is also to be devoted to expanding irrigation and drainage projects and to improving marketing facilities.

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## ARGENTINA TO REGULATE FLOUR INDUSTRY

Three decrees recently issued by the President of Argentina are expected to exert an important influence on the development of the flour-milling industries in that country, it is reported by the Buenos Aires office of the Bureau of Agricultural Economics.

The new measures are the result of a rise in bread prices some months ago and of the determination of the Government to put into operation the legislation deemed necessary to improve the technique of the flour industry, to safeguard the future of the industry, and to protect the interests of consumers. A request by the Chambers of Millers for governmental regulation of flour production by means of quotas, however, was declined by the Government.

The first decree fixes official standards for the different grades of flour produced in Argentina. The objective is to assure

buyers that the various qualities of flour produced and marketed domestically conform with official specifications for type and grade and to make it possible for bakers to produce and market bread of uniform quality. The decree also provides the procedure for the settlement of disputes when quality of flour is not in accordance with delivery contract.

The second decree authorizes the Argentine Ministry of Agriculture to regulate and control the activities of the Chambers of Millers. All transactions in flour and mill byproducts in Argentina are conducted through the Chambers of Millers in Buenos Aires and Rosario. The decree points out that the influence of these Chambers on prices and on the development of the flour industry makes it advisable that their operation be subject to official control.

The third decree establishes an Advisory Board composed of representatives of the millers, pastry makers, and bakers, whose chief duty will be to settle controversies arising between flour millers and related industries. The Board will also advise the Ministry of Agriculture on all matters related to flour, bread, macaroni, and biscuit industries and will collaborate with the Ministry in drafting legislation in the interests of both the consuming public and the industries concerned.

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## LATVIAN AGRARIAN POLICY

As might be expected in a predominantly agricultural country, in Latvia the Government has consistently followed a policy of support and subsidy for its farming population. According to a report received by the Bureau of Agricultural Economics from the American legation in Riga, a system of guaranteed prices and export monopolies has gradually been developed until it now embraces all of the principal farm products, including grain, butter, meat, flax, sugar beets, potatoes, seeds, and hides and skins.

In most cases, guaranteed domestic prices have been considerably above world prices. The Government, therefore, has found it necessary to subsidize agricultural exports. Such subsidies constituted a serious financial drain on the national treasury until the devaluation of the lat in September 1936. Since that time, prices in latos for commodities exported have been much higher, and the Government has been able to reduce export subsidies and at the same time retain its guaranteed prices for products sold in the domestic market.

The Government has ample authority for the control and regulation of planted acreage but has made no use of its powers in that respect,

since export outlets have always been available for surplus production. In fact, the Government's aim at the present time is to expand agricultural production in most lines. Another important feature of its agrarian policy has been the refinancing and consolidation of agricultural debts into long-term loans at low rates of interest.

The Latvian agricultural policy is carried out through the Ministry of Agriculture and the Chamber of Agriculture. All other agricultural associations, except the Central Union of Cooperatives, have been liquidated and their assets taken over by the Chamber of Agriculture. The Chamber has charge of all agricultural schools and of activities in connection with seed improvement, establishment of breeding stations, and encouragement of increased use of machinery and improved agricultural practices. The Central Union of Cooperatives acts as the wholesale buying, selling, and distributing center for all cooperative organizations.

One of the problems of Latvian agriculture has been the scarcity of farm labor. Up to the present time, this difficulty has been met by seasonal importation of labor from Lithuania and Poland. In order to eliminate the continued necessity for such action, the Government is encouraging the increased use of machinery on farms, the transfer of city unemployed to rural districts, the establishment of a permanent body of farm laborers, and the prevention of population movements from rural districts to cities.

The Government is also encouraging and assisting in the erection of better types of farm buildings. In that connection, bricks and roofing tiles are being supplied to farmers at low prices, and special rates are made by the railways for transporting building materials. In addition, the Government cuts and saws timber from its forest reserves, which it sells to farmers at low prices.

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## NEWFOUNDLAND DEVELOPING AGRICULTURAL INDUSTRY

Attempts on the part of the Government of Newfoundland, under a program inaugurated in 1934 to develop the agricultural potentialities of that island, are now beginning to meet with some success, reports Consul General Harold B. Quarton at St. John's.

Progress under the program has of necessity been rather slow because of the scarcity of good agricultural land and the general lack of interest on the part of the population, which for many generations has made its living largely from fishing. The objective of the Government

has been, first, to assist those already established in commercial agriculture and, second, to stimulate production for home consumption wherever arable land is available.

As a result of the establishment and functioning of cooperative societies, it is expected that progress will be more rapid in the future. Since the enactment of a law in 1935 authorizing the organization of agricultural cooperatives and their subsidization by the Government, 46 societies have been established. These societies are active in every phase of agricultural work, and most of the governmental assistance to agriculture has been through them.

Governmental funds for the purchase of seed and fertilizers, purebred livestock, and machinery are allocated to producers through the agricultural cooperatives. The Government likewise has purchased considerable numbers of pigs, sheep, cattle, and poultry, which have been used by the members of the cooperatives as a nucleus for the establishment of a livestock industry.

Since the spring of 1936, the Government has been offering a bonus of $25 per acre on newly cleared land. Approximately 1,000 acres have been cleared. Four land-clearing projects are under way. The work is being done under governmental supervision by men on relief who are interested in securing land for food production.

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